FOREST SURVEY RELEASE NO. 30

JUNE 15, 1949

FOREST RESOURCES OF NORTHEAST FLORIDA, 1949

by J. F. McCormack, Forester
Division of Forest Economics

SOUTHEASTERN FOREST EXPERIMENT STATION
ASHEVILLE, NORTH CAROLINA

I. T. HAIG, Director

In cooperation with
FLORIDA FOREST SERVICE
TALLAHASSEE, FLORIDA
C. H. COULTER, State Forester

FOREWORD

Through the McSweeney-McNary Act of 1928, Congress authorized the Secretary of Agriculture to conduct a comprehensive survey of the forest resources of the United States. The Forest Survey was organized by the Forest Service to carry out the provisions of the Act through the Regional Forest Experiment Stations. In the Southeastern States the Forest Survey is an activity of the Division of Forest Economics of the Southeastern Forest Experiment Station, Asheville, North Carolina.

The five-fold purpose of the Forest Survey is (1) to make a field inventory of the present supply of standing timber, (2) to ascertain the rate at which this supply is being increased through growth, (3) to determine the rate at which it is being reduced through industrial and domestic uses, fire, and other causes, (4) to determine the present consumption and the probable future trend in requirements for forest products, and (5) to interpret and correlate these finds to aid in the formulation of private and public policies regarding forest land management.

The State of Florida was inventoried by the Forest Survey in the period 1934-36 and reports presenting the findings have been published. Since then, better forest management, more intensive forest use, changes in land use, and other factors have caused changes in the forest growing stock that can only be measured accurately by on-the-ground surveys. A resurvey of the forest resources of Florida is now under way. This progress report presents area and volume statistics of the resurvey in Northeastern Florida (Survey Unit No. 1). Statistical reports covering other portions of the State will be published in the near future. When complete statistical data are available, an analytical report will be prepared which will interpret these statistics and focus attention upon the principal forest problems and possible solutions.

ACKNOWLEDGMENTS

The author gratefully acknowledges the assistance received from C. H. Coulter, State Forester, and his staff in facilitating the Survey work and in providing additional personnel to augment and intensify the collection of data in the field.

The timber inventory work in the field was under the supervision of Mackay B. Bryan. Photo interpretation work was done by N. F. Force, R. C. Aldrich, and R. W. Cooper. Sample plot work was under the direction of Fritz Lorentzen, E. W. Vetter, M. W. McClure, W. A. McCarty, H. W. Allen, E. A. Schluter, Ben Jusky, and F. S. Hill.

Office compilation of the data was under the direction of Miss Agnes Creasman, assisted by Mrs. Christine Paxton, Miss Priscilla Walker, and Miss Camilla Young.

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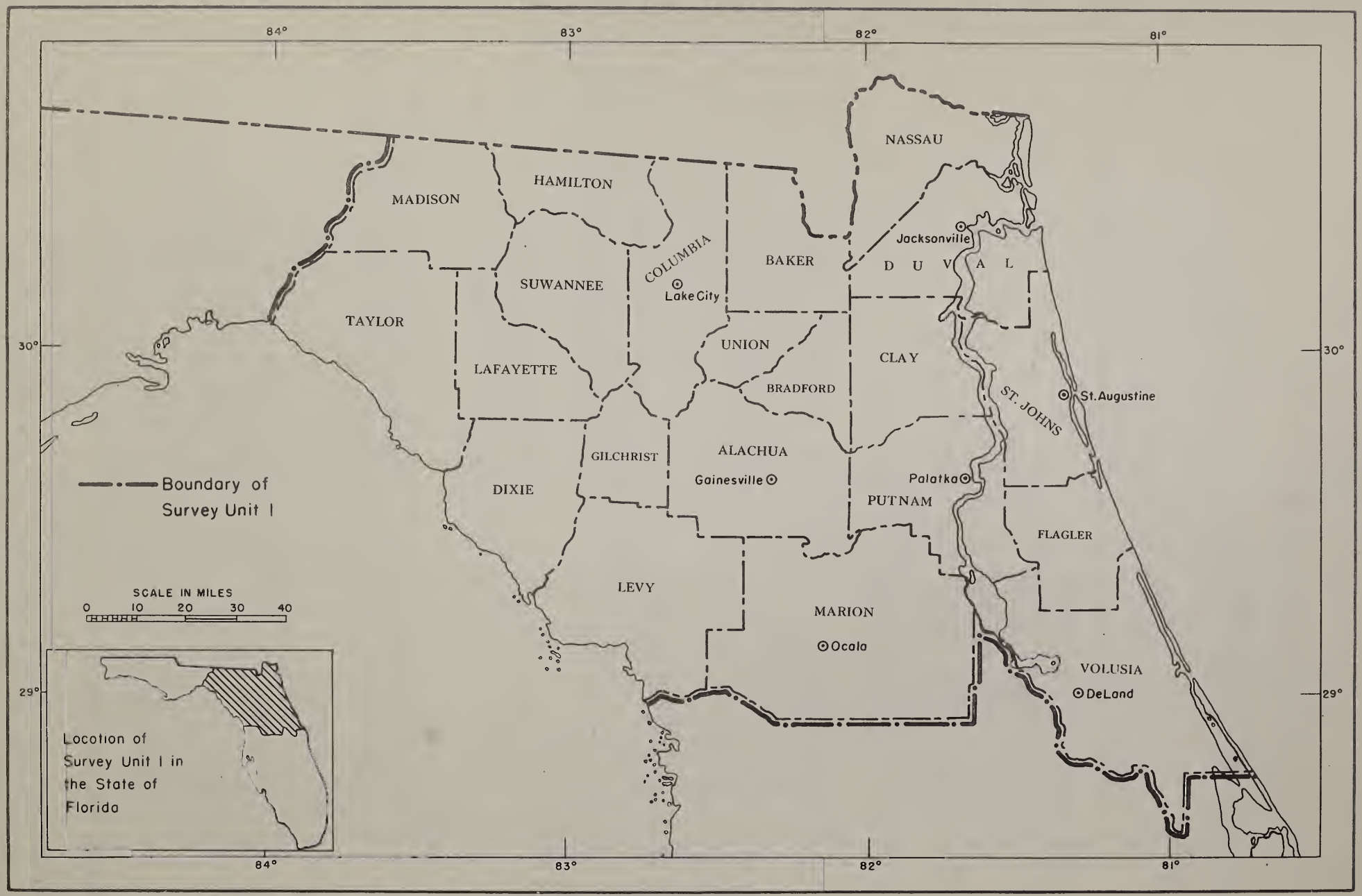


Figure 1. - Counties in Northeast Florida included in Survey Unit No. 1

FOREST RESOURCES OF NORTHEAST FLORIDA

A resurvey of the forest resources of the entire state of Florida was started in June 1948 and is still in progress. This report presents up-to-date facts on forest area and timber volumes in Northeast Florida (Survey Unit No. 1) as determined in the resurvey. By comparison with the original inventory, which was completed in 1934, the trends in forest area and timber supply can be evaluated.

1949 FACTS AND SIGNIFICANT CHANGES

Forest area increases slightly: At the time of the resurvey there were 7.7 million acres of forest land, of which 99 percent was classified as commercial. This amounted to approximately a one-percent increase in both the total forest acreage and in the commercial forest acreage since the original survey. Forests cover nearly 81 percent of the total land area of the Unit.

More forest land in hardwood types: Hardwood types occupy 2.1 million acres, or 28 percent, of the commercial forest area. Softwood types occupy 5.5 million acres, or 72 percent. During the past 14 years there has been an increase of 10 percent in the total hardwood type area and a corresponding decrease in the area of pine types. It was found that the area of lowland hardwood types increased 66 percent and the area in upland hardwood types increased 43 percent. The area in turpentine pine types decreased 16 percent and in non-turpentine pine types, 6 percent.

Saw-timber stands occupy 24 percent of forest land: Stands of saw timber containing 1,500 board feet or more per acre occupied 24 percent of the commercial forest land in 1949. Most of these stands fell in the small saw timber class (see definition of terms, page 30). Twenty percent supported stands of pole timber, 10 percent was in the seedling and sapling class, and 46 percent was covered lightly by scattered trees of various sizes. No direct comparisons of the forest area by stand class with the original survey are possible, since different standards were used on the resurvey.

Saw-timber volume decreases: The total volume of saw timber in 1949 was estimated to be 10.1 billion board feet, including 460 million board feet in 12-inch hardwoods, which were not considered saw timber in the original survey. Disregarding the 12-inch hardwoods, the 1949 volume was 9.6 billion board feet, a decrease of 14 percent from 1934.

Table A.--Change in volume of saw timber, 1934 to 1949

Species group	1934	1949	Change
	Thousand bd. ft.	Thousand bd. ft.	Percent
Pines	6,495,700	6,639,100	+ 2
Hardwoods 1/	2,645,300	1,309,700	- 50
Cypress 2/	2,017,800	1,655,200	- 18
All species	11,158,800	9,604,000	- 14

1/ Excludes volume of hardwoods 12 inches d.b.h.

2/ Includes volume of white cedar.

Total sound-tree volume decreases: The net cubic-foot volume of all sound trees 5.0 inches d.b.h. and larger dropped from 3.8 billion cubic feet in 1934 to 3.4 billion in 1949, a decrease of 11 percent.

The volume of sound wood in cull trees of all species groups increased. In 1949, approximately one-fourth of the total volume of wood was in cull trees as compared to 12 percent in 1934. Including scrub oak and noncommercial species, 57 percent of the total hardwood volume was classed as cull material.

Table B.--Change in volume of all trees 5.0 inches d.b.h. and larger, 1934 to 1949

Species group	Sound tree volume			Cull tree volume		
	1934	1949	Change	1934	1949	Change
	Million cu. ft.	Million cu. ft.	Percent	Million cu. ft.	Million cu. ft.	Percent
Pines 1/	2,106	2,060	- 2	16	50	+ 212
Hardwoods 2/	1,063	799	- 25	452	1,051	+ 133
Cypress	680	579	- 15	38	63	+ 66
All species	3,849	3,438	- 11	506	1,164	+ 130

1/ Excluding turpentine butts.

2/ Excluding volume in limbs.

Area in working turpentine crops decreases: In 1949 there were 484,900 acres in working turpentine timber crops, a decrease of 65 percent since 1934. The number of turpentine trees being worked decreased from 21 million in 1934 to 10 million in 1949. There were 50 million round turpentine pines 9.0 inches d.b.h. and larger available for gum production in 1949. This is nearly double the number available at the time of the original survey.

Nearly two-thirds of the forest land is understocked: Resurvey data indicate that 2.6 million acres of the commercial forest land were less than 10 percent stocked with sound trees of commercial species. There are also 2.2 million acres which were from 10 to 39 percent stocked with an adequate number of sound trees. This area of 4.8 million acres, which is less than 40 percent stocked, amounts to 64 percent of the total commercial forest acreage. In the pine types, stands of longleaf pine and pond pine have over 80 percent of their area in a poorly stocked condition. The cypress and lowland hardwood types are in better condition from a stocking standpoint, since only about 30 percent of the area is less than 40 percent stocked with sound trees.

Table 1.--Gross area[1/] by broad use class, 1949

Class of use	Area	
	Acres	Percent
Forest land:		
Commercial	7,601,700	75.9
Reserved	6,100	0.1
Non-productive	85,900	0.8
Total forest	7,693,700	76.8
Non-forest land:		
Agricultural - active	869,500	8.7
Agricultural - idle	415,700	4.1
Marsh	290,700	2.9
Dunes and beaches	29,600	0.3
Urban and other[2/]	226,400	2.3
Total non-forest	1,831,900	18.3
Total land area	9,525,600	95.1
Total water area	491,700	4.9
All classes	10,017,300	100.0

1/ From U. S. Bureau of the Census, 1940.

2/ Includes urban, suburban residential, and rural industrial areas, rights-of-way, cemeteries, schools, etc.

Table 2.--Ownership of land, 1949

Class of ownership	All land		Commercial forest land	
	Acres	Percent	Acres	Percent
Public land:				
National forest	439,800	4.6	417,300	5.5
Indian	--	--	--	--
Other federal	92,900	1.0	69,400	0.9
Total federal	532,700	5.6	486,700	6.4
State	134,300	1.4	70,500	0.9
County and municipal	23,100	0.2	7,700	0.1
Total public	690,100	7.2	564,900	7.4
Private land	8,835,500	92.8	7,036,800	92.6
All classes	9,525,600	100.0	7,601,700	100.0

Table 3.--Commercial forest area by forest type and stand size, 1949

Forest type	Large saw-timber stands	Small saw-timber stands	Pole timber stands	Seedling & sapling stands	Poorly stocked stands & unstocked areas	All stands
	Acres	Acres	Acres	Acres	Acres	Acres
Longleaf pine	5,200	270,400	544,900	61,300	1,370,100	2,251,900
Slash pine	25,000	605,900	340,500	252,200	708,600	1,932,200
Loblolly pine	17,800	67,800	52,300	43,800	82,100	263,800
Pond pine	3,300	39,600	42,000	35,000	96,700	216,600
Sand pine	--	15,600	57,800	129,700	26,400	229,500
Cypress	8,500	290,700	124,200	66,900	118,500	608,800
All softwd. types	59,800	1,290,000	1,161,700	588,900	2,402,400	5,502,800
Lowland hardwoods	80,500	351,700	295,500	160,500	203,000	1,091,200
Upland hardwoods	700	3,100	50,500	33,400	181,900	269,600
Scrub oak	--	--	--	--	727,400	727,400
All hardwd. types	81,200	354,800	346,000	193,900	1,112,300	2,088,200
Palm	--	--	--	--	10,700	10,700
All types	141,000	1,644,800	1,507,700	782,800	3,525,400	7,601,700
Percent	1.9	21.6	19.8	10.3	46.4	100.0

1/ See description of forest types and stand size classes in appendix.

Table 4.--Net volume[1/] of saw timber by species and stand size, 1949

(in thousand board feet)

Species[2/]	Large saw-timber stands	Small saw-timber stands	Pole timber stands	Seedling & sapling stands	Poorly stocked stands & unstocked areas	All stands
Softwoods:						
Longleaf pine	10,900	1,025,200	506,800	44,300	409,500	1,996,700
Slash pine	215,100	2,552,300	401,700	155,400	330,900	3,655,400
Loblolly pine	101,500	422,000	56,700	22,800	20,700	623,700
Pond pine	10,600	126,400	35,800	10,600	59,200	242,600
Other pines	17,700	71,200	13,300	6,000	12,500	120,700
Total	355,800	4,197,100	1,014,300	239,100	832,800	6,639,100
Cypress	48,200	1,325,700	157,100	33,900	78,500	1,643,400
Cedar	--	400	2,600	--	8,800	11,800
Total sftwds.	404,000	5,523,200	1,174,000	273,000	920,100	8,294,300
Hardwoods:						
Tupelo	126,500	434,300	69,300	43,800	10,800	684,700
Sweetgum	56,800	168,900	22,800	10,300	7,800	266,600
Soft maple	13,100	64,500	4,300	600	1,100	83,600
Other soft hdwds.	29,000	102,300	20,900	2,200	17,000	171,400
Total	225,400	770,000	117,300	56,900	36,700	1,206,300
Red oaks	44,300	170,100	39,300	27,200	26,600	307,500
White oaks	20,700	18,000	9,500	10,100	13,500	71,800
Hickory	5,700	36,200	9,300	1,600	1,300	54,100
Ash	8,800	45,300	19,800	2,600	2,600	79,100
Other hard hdwds.	9,200	24,100	11,300	2,100	4,000	50,700
Total	88,700	293,700	89,200	43,600	48,000	563,200
Total hdwds.	314,100	1,063,700	206,500	100,500	84,700	1,769,500
All species	718,100	6,586,900	1,380,500	373,500	1,004,800	10,063,800
Percent	7.1	65.5	13.7	3.7	10.0	100.0

1/ Log scale, International 1/4-inch rule.

2/ See appendix for species combined with others.

Table 5.--Net volume[1] of saw timber by species and diameter class, 1949

Species	10-12 inches[2]	14-18 inches	20-24 inches	26 + inches	All diameters	
	Thousand bd. ft.	Thousand bd. ft.	Thousand bd. ft.	Thousand bd. ft.	Thousand bd. ft.	Percent
Softwoods:						
Longleaf pine	1,657,100	336,600	3,000	--	1,996,700	19.9
Slash pine	2,398,900	1,191,200	65,300	--	3,655,400	36.3
Loblolly pine	185,200	369,000	58,200	11,300	623,700	6.2
Pond pine	123,400	115,500	3,700	--	242,600	2.4
Other pines	72,700	48,000	--	--	120,700	1.2
Total	4,437,300	2,060,300	130,200	11,300	6,639,100	66.0
Cypress	1,167,700	443,100	13,500	19,100	1,643,400	16.3
Cedar	4,400	2,400	5,000	--	11,800	0.1
Total sftwds.	5,609,400	2,505,800	148,700	30,400	8,294,300	82.4
Hardwoods:						
Tupelo	205,700	358,800	109,500	10,700	684,700	6.8
Sweetgum	54,800	157,400	43,200	11,200	266,600	2.7
Soft maple	24,300	43,300	16,000	--	83,600	0.8
Other soft hdwds.	40,600	106,500	24,300	--	171,400	1.7
Total	325,400	666,000	193,000	21,900	1,206,300	12.0
Red oaks	61,100	148,800	60,500	37,100	307,500	3.1
White oaks	18,300	28,200	19,500	5,800	71,800	0.7
Hickory	13,600	30,000	6,100	4,400	54,100	0.5
Ash	27,400	42,100	9,600	--	79,100	0.8
Other hard hdwds.	14,000	32,200	4,500	--	50,700	0.5
Total	134,400	281,300	100,200	47,300	563,200	5.6
Total hdwds.	459,800	947,300	293,200	69,200	1,769,500	17.6
All species	6,069,200	3,453,100	441,900	99,600	10,063,800	100.0
Percent	60.3	34.3	4.4	1.0	100.0	

1/ Log scale, International 1/4-inch rule.

2/ Ten-inch hardwoods are not included.

Table 6.--Net volume[1/] of saw timber by forest type and stand size, 1949

(in thousand board feet)

Forest type[2/]	Large saw-timber stands	Small saw-timber stands	Pole timber stands	Seedling & sapling stands	Poorly stocked stands & unstocked areas	All stands
Longleaf pine	19,200	954,900	521,100	12,800	373,200	1,881,200
Slash pine	169,800	2,468,800	316,800	150,600	313,000	3,419,000
Loblolly pine	135,100	411,800	16,600	26,400	6,400	596,300
Pond pine	10,600	123,800	31,700	21,400	45,200	232,700
Sand pine	--	44,100	11,700	--	10,400	66,200
Cypress	36,000	1,449,000	154,700	27,400	74,700	1,741,800
All sftwd. types	370,700	5,452,400	1,052,600	238,600	822,900	7,937,200
Lowland hdwds.	344,300	1,132,400	308,400	118,200	102,900	2,006,200
Upland hdwds.	3,100	2,100	19,500	16,700	37,600	79,000
Scrub oak	--	--	--	--	41,400	41,400
All hdwd. types	347,400	1,134,500	327,900	134,900	181,900	2,126,600
All types	718,100	6,586,900	1,380,500	373,500	1,004,800	10,063,800
Percent	7.1	65.5	13.7	3.7	10.0	100.0

1/ Log scale, International 1/4-inch rule.

2/ See description of forest types and stand-size classes in appendix.

Table 7.--Net volume[1/] of all trees by species and stand size, 1949

SOUND TREES (in thousand cords)

Species	Large saw-timber stands	Small saw-timber stands	Pole timber stands	Seedling & sapling stands	Poorly stocked stands & unstocked areas	All stands
Softwoods:						
Longleaf pine	26	4,050	3,562	208	2,369	10,215
Slash pine	553	9,531	2,959	680	1,326	15,049
Loblolly pine	254	1,167	289	161	72	1,943
Pond pine	28	429	221	94	202	974
Other pines	44	226	409	59	37	775
Total	905	15,403	7,440	1,202	4,006	28,956
Cypress	140	5,530	1,266	150	323	7,409
Cedar	--	1	18	--	32	51
Total sftwds.	1,045	20,934	8,724	1,352	4,361	36,416
Hardwoods:						
Tupelo	413	2,679	971	234	81	4,378
Sweetgum	197	738	394	108	61	1,498
Soft maple	109	421	123	62	17	732
Other soft hdwds.	130	474	252	18	79	953
Total	849	4,312	1,740	422	238	7,561
Red oaks	149	844	439	120	137	1,689
White oaks	60	89	91	51	104	395
Hickory	36	154	94	12	12	308
Ash	43	384	321	17	40	805
Holly, dogwood	3	23	24	13	4	67
Other hard hdwds.	39	157	118	25	63	402
Total	330	1,651	1,087	238	360	3,666
Total hdwds.	1,179	5,963	2,827	660	598	11,227
All species	2,224	26,897	11,551	2,012	4,959	47,643
Percent	4.7	56.5	24.2	4.2	10.4	100.0

TREES OF OTHER QUALITY CLASSES (in thousand cords)

Rough culls						
Softwoods	11	361	267	62	188	889
Hardwoods[2/]	528	2,821	1,776	734	3,772	9,631
Rotten culls	526	2,603	1,461	644	940	6,174
Palms	293	1,037	573	463	1,709	4,075
All other classes	1,358	6,822	4,077	1,903	6,609	20,769

1/ Sound wood and bark.

2/ Includes scrub oak and noncommercial species.

Table 8.--Net volume[1/] of all trees by species and diameter class, 1949

SOUND TREES (in thousand cords)

Species	Pole trees		Saw-timber trees				All diameters
	6 inches	8 inches	10 inches	12 inches	14-18 inches	20 + inches	
Softwoods:							
Longleaf pine	1,768	2,888	3,079	1,645	828	7	10,215
Slash pine	2,246	2,755	3,716	3,232	2,958	142	15,049
Loblolly pine	139	232	239	286	897	150	1,943
Pond pine	120	225	125	216	280	8	974
Other pines	261	190	88	118	118	--	775
Total	4,534	6,290	7,247	5,497	5,081	307	28,956
Cypress	1,385	1,901	1,624	1,426	1,010	63	7,409
Cedar	--	25	11	--	5	10	51
Total sftwds.	5,919	8,216	8,882	6,923	6,096	380	36,416
Hardwoods:							
Tupelo	815	801	879	613	967	303	4,378
Sweetgum	376	205	204	166	414	133	1,498
Soft maple	183	151	165	75	118	40	732
Other soft hdwds.	119	177	177	121	296	63	953
Total	1,493	1,334	1,425	975	1,795	539	7,561
Red oaks	266	326	255	182	410	250	1,689
White oaks	33	73	104	52	71	62	395
Hickory	41	46	72	42	80	27	308
Ash	239	181	168	83	110	24	805
Holly, dogwood	34	18	12	3	--	--	67
Other hard hdwds.	58	81	131	41	80	11	402
Total	671	725	742	403	751	374	3,666
Total hdwds.	2,164	2,059	2,167	1,378	2,546	913	11,227
All species	8,083	10,275	11,049	8,301	8,642	1,293	47,643
Percent	17.0	21.6	23.2	17.4	18.1	2.7	100.0

TREES OF OTHER QUALITY CLASSES (in thousand cords)

Rough culls							
Softwoods	214	182	202	88	153	50	889
Hardwoods[2/]	1,993	1,687	1,578	1,122	2,224	1,027	9,631
Rotten culls	398	571	581	623	1,578	2,423	6,174
Palms	4	205	1,412	1,972	482	--	4,075
All other classes	2,609	2,645	3,773	3,805	4,437	3,500	20,769

1/ Sound wood and bark.

2/ Includes scrub oak and noncommercial species.

Table 9.--Net volume[1/] of all trees by species and class of material, 1949

(in thousand cords)

Species	SOUND TREES				CULL TREES	
	Saw-timber trees		Pole timber trees	Total sound trees	Rough	Rotten
	Sawlog portion	Upper stems				
Softwoods:						
Longleaf pine	4,571	988	4,656	10,215	63	15
Slash pine	8,123	1,925	5,001	15,049	189	47
Loblolly pine	1,247	325	371	1,943	132	24
Pond pine	516	113	345	974	85	33
Other pines	266	58	451	775	82	9
Total	14,723	3,409	10,824	28,956	551	128
Cypress	3,262	861	3,286	7,409	338	439
Cedar	21	5	25	51	--	10
Total sftwds.	18,006	4,275	14,135	36,416	889	577
Hardwoods:						
Tupelo	1,527	356	2,495	4,378	1,291	1,139
Sweetgum	574	139	785	1,498	413	334
Soft maple	185	48	499	732	489	533
Other soft hdwds.	396	84	473	953	541	440
Total	2,682	627	4,252	7,561	2,734	2,446
Red oaks	696	146	847	1,689	1,237	1,499
White oaks	150	35	210	395	1,637	1,018
Hickory	120	29	159	308	165	102
Ash	178	39	588	805	464	416
Holly, dogwood	3	--	64	67	7	4
Scrub oak[2/]	--	--	--	--	3,158	--
Other hard hdwds.	106	26	270	402	229	112
Total	1,253	275	2,138	3,666	6,897	3,151
Total hdwds.	3,935	902	6,390	11,227	9,631	5,597
All species	21,941	5,177	20,525	47,643	10,520	6,174
Percent	46.0	10.9	43.1	100.0	63.0	37.0

1/ Sound wood and bark, excluding volume of palms shown in tables 7 and 8.

2/ Includes noncommercial species.

Table 10.--Net volume[1/] of all trees by forest type and stand size, 1949

SOUND TREES (in thousand cords)

Forest type	Large saw-timber stands	Small saw-timber stands	Pole timber stands	Seedling & sapling stands	Poorly stocked stands & unstocked areas	All stands
Longleaf pine	54	3,836	3,573	86	2,188	9,737
Slash pine	531	9,616	2,803	704	1,408	15,062
Loblolly pine	369	1,291	193	183	19	2,055
Pond pine	28	440	174	69	160	871
Sand pine	--	153	403	41	28	625
Cypress	120	6,351	1,409	109	310	8,299
All softwd. types	1,102	21,687	8,555	1,192	4,113	36,649
Lowland hdwds.	1,114	5,195	2,851	758	501	10,419
Upland hdwds.	8	15	145	62	165	395
Scrub oak	--	--	--	--	180	180
All hdwd. types	1,122	5,210	2,996	820	846	10,994
All types	2,224	26,897	11,551	2,012	4,959	47,643
Percent	4.7	56.5	24.2	4.2	10.4	100.0

ROUGH AND ROTTEN CULLS (in thousand cords)

Longleaf pine	5	66	221	--	761	1,053
Slash pine	85	727	347	59	266	1,484
Loblolly pine	109	288	144	165	200	906
Pond pine	11	61	22	15	12	121
Sand pine	--	14	57	--	9	80
Cypress	27	868	185	38	174	1,292
All softwd. types	237	2,024	976	277	1,422	4,936
Lowland hdwds.	828	3,714	2,244	952	1,189	8,927
Upland hdwds.[2/]	--	47	284	211	684	1,226
Scrub oak	--	--	--	--	1,605	1,605
All hdwd. types	828	3,761	2,528	1,163	3,478	11,758
All types	1,065	5,785	3,504	1,440	4,900	16,694
Percent	6.4	34.7	21.0	8.6	29.3	100.0

1/ Sound wood and bark, excluding volume of palms shown in tables 7 and 8.

2/ Includes 1,000 cords in palm type.

Table 11.--Net volume[1/] of pole timber trees by forest type and stand size, 1949

SOUND TREES (in thousand cords)

Forest type	Large saw-timber stands	Small saw-timber stands	Pole timber stands	Seedling & sapling stands	Poorly stocked stands & unstocked areas	All stands
Longleaf pine	10	1,190	2,100	52	1,177	4,529
Slash pine	113	2,755	1,924	296	564	5,652
Loblolly pine	47	230	147	113	3	540
Pond pine	--	112	95	14	39	260
Sand pine	--	29	368	41	--	438
Cypress	33	2,593	992	38	127	3,783
All sftwd. types	203	6,909	5,626	554	1,910	15,202
Lowland hdwds.	239	2,131	2,026	451	223	5,070
Upland hdwds.	1	9	90	17	68	185
Scrub oak	--	--	--	--	68	68
All hdwd. types	240	2,140	2,116	468	359	5,323
All types	443	9,049	7,742	1,022	2,269	20,525
Percent	2.2	44.1	37.7	5.0	11.0	100.0

ROUGH AND ROTTEN CULLS (in thousand cords)

Longleaf pine	3	35	151	--	429	618
Slash pine	32	309	197	30	146	714
Loblolly pine	47	114	85	62	19	327
Pond pine	5	28	20	--	2	55
Sand pine	--	6	46	--	--	52
Cypress	11	446	142	12	112	723
All sftwd. types	98	938	641	104	708	2,489
Lowland hdwds.	142	1,067	887	363	379	2,838
Upland hdwds.[2/]	--	7	189	70	341	607
Scrub oak	--	--	--	--	1,185	1,185
All hdwd. types	142	1,074	1,076	433	1,905	4,630
All types	240	2,012	1,717	537	2,613	7,119
Percent	3.4	28.3	24.1	7.5	36.7	100.0

1/ Sound wood and bark, excluding volume of palms shown in tables 7 and 8.

2/ Includes 1,000 cords in palm type.

Table 12.--Net volume[1/] of all trees by species and diameter class, 1949

SOUND TREES (in thousand cubic feet)

Species	Pole trees		Saw-timber trees				All diameters
	6 inches	8 inches	10 inches	12 inches	14-18 inches	20 + inches	
Softwoods:							
Longleaf pine	103,795	193,376	222,346	124,902	65,955	581	710,955
Slash pine	132,138	185,224	268,704	244,174	235,302	12,024	1,077,566
Loblolly pine	8,224	15,802	17,276	21,640	71,439	12,558	146,939
Pond pine	7,075	15,363	9,099	16,413	22,619	684	71,253
Other pines	15,425	12,850	6,389	9,058	9,246	--	52,968
Total	266,657	422,615	523,814	416,187	404,561	25,847	2,059,681
Cypress	90,917	140,484	128,895	120,116	88,228	6,138	574,778
Cedar	--	1,944	909	451	902	--	4,206
Total sftwds.	357,574	565,043	653,618	536,754	493,691	31,985	2,638,665
Hardwoods:							
Tupelo	49,460	52,811	60,964	46,675	76,362	24,844	311,116
Sweetgum	22,804	13,823	14,237	12,272	32,737	10,932	106,805
Soft maple	10,968	10,020	11,741	5,583	9,029	3,285	50,626
Other soft hdwds.	7,203	12,213	12,464	9,625	23,431	5,086	70,022
Total	90,435	88,867	99,406	74,155	141,559	44,147	538,569
Red oaks	15,999	21,708	17,490	14,169	32,634	20,435	122,435
White oaks	1,946	4,937	7,074	3,890	5,651	5,085	28,583
Hickory	2,380	3,205	4,907	3,095	6,258	2,213	22,058
Ash	14,338	12,139	11,525	6,217	8,819	1,886	54,924
Holly, dogwood	1,999	1,293	784	209	--	--	4,285
Other hard hdwds.	3,554	5,655	8,692	3,015	6,307	891	28,114
Total	40,216	48,937	50,472	30,595	59,669	30,510	260,399
Total hdwds.	130,651	137,804	149,878	104,750	201,228	74,657	798,968
All species	488,225	702,847	803,496	641,504	694,919	106,642	3,437,633
Percent	14.2	20.4	23.4	18.7	20.2	3.1	100.0

TREES OF OTHER QUALITY CLASSES (in thousand cubic feet)

Rough culls							
Softwoods	13,483	13,209	15,794	7,072	12,430	4,404	66,392
Hardwoods[2/]	120,881	111,775	109,587	83,460	176,312	83,822	685,837
Rotten culls	24,234	36,549	42,198	46,743	128,547	199,980	478,251
Palms	406	20,319	142,442	202,902	51,133	--	417,202
All other classes	159,004	181,852	310,021	340,177	368,422	288,206	1,647,682

1/ Excluding bark.

2/ Includes scrub oak and noncommercial species.

Table 13.--Net volume[1/] of all trees by species and class of material, 1949

(in thousand cubic feet)

Species	SOUND TREES				CULL TREES	
	Saw-timber trees		Pole timber trees	Total sound trees	Rough	Rotten
	Sawlog portion	Upper stems				
Softwoods:						
Longleaf pine	344,873	68,911	297,171	710,955	4,693	1,072
Slash pine	623,717	136,487	317,362	1,077,566	13,736	3,280
Loblolly pine	99,230	23,683	24,026	146,939	10,365	1,585
Pond pine	39,803	9,012	22,438	71,253	6,036	2,739
Other pines	20,110	4,583	28,275	52,968	5,612	513
Total	1,127,733	242,676	689,272	2,059,681	40,442	9,189
Cypress	281,853	61,524	231,401	574,778	25,950	36,559
Cedar	1,820	442	1,944	4,206	--	873
Total sftwds.	1,411,406	304,642	922,617	2,638,665	66,392	46,621
Hardwoods:						
Tupelo	121,767	26,114	163,235	311,116	91,914	85,269
Sweetgum	45,844	10,097	50,864	106,805	30,121	25,804
Soft maple	14,760	3,137	32,729	50,626	34,786	41,176
Other soft hdwds.	31,697	6,445	31,880	70,022	40,738	33,642
Total	214,068	45,793	278,708	538,569	197,559	185,891
Red oaks	55,905	11,333	55,197	122,435	91,681	117,683
White oaks	11,912	2,714	13,957	28,583	121,493	80,425
Hickory	9,537	2,029	10,492	22,058	12,488	8,056
Ash	13,866	3,056	38,002	54,924	31,545	31,052
Holly, dogwood	209	--	4,076	4,285	479	264
Scrub oak[2/]	--	--	--	--	214,405	--
Other hard hdwds.	8,287	1,926	17,901	28,114	16,187	8,259
Total	99,716	21,058	139,625	260,399	488,278	245,739
Total hdwds.	313,784	66,851	418,333	798,968	685,837	431,630
All species	1,725,190	371,493	1,340,950	3,437,633	752,229	478,251
Percent	50.2	10.8	39.0	100.0	61.1	38.9

1/ Excluding bark and volume of palms shown in table 12.

2/ Includes noncommercial species.

Table 14.--Average volume[1/] per acre of saw timber by forest type, species group, and stand size, 1949

(in board feet)

Forest type and species group	Large saw-timber stands	Small saw-timber stands	Pole timber stands	Seedling & sapling stands	Poorly stocked stands & unstocked areas	All stands
Longleaf pine						
Softwood	3,692	3,522	946	208	272	832
Hardwood	--	10	10	--	--	4
Slash pine						
Softwood	5,990	4,034	889	597	437	1,738
Hardwood	799	403	41	--	5	32
Loblolly pine						
Softwood	6,568	5,594	261	303	77	2,007
Hardwood	1,033	475	58	300	--	253
Pond pine						
Softwood	3,195	3,056	755	611	467	1,061
Hardwood	--	72	--	--	--	13
Sand pine						
Softwood	--	2,833	202	--	395	289
Hardwood	--	--	--	--	--	--
Cypress						
Softwood	3,406	4,695	1,242	385	604	2,703
Hardwood	838	289	3	24	27	158
Lowland hardwoods						
Softwood	979	617	464	251	181	467
Hardwood	3,300	2,603	580	486	326	1,371
Upland hardwoods						
Softwood	--	--	136	267	151	161
Hardwood	3,961	708	250	235	55	132
Scrub oak						
Softwood	--	--	--	--	54	54
Hardwood	--	--	--	--	2	2
All types						
Softwood	2,865	3,358	779	349	261	1,093
Hardwood	2,227	647	137	128	24	233

1/ Log scale, International 1/4-inch rule.

Table 15.--Average volume[1] per acre of all trees by forest type, species group, and stand size, 1949

(in standard cords)

Forest type and species group	Large saw-timber stands		Small saw-timber stands		Pole timber stands		Other stand sizes		All stands	
	Sound[2]	Cull[2]	Sound	Cull	Sound	Cull	Sound	Cull	Sound	Cull
Longleaf pine										
Softwood	10.4	--	14.1	0.1	6.5	0.1	1.6	3/	4.3	0.1
Hardwood	--	1.0	0.1	0.1	3/	0.3	3/	0.5	3/	0.4
Slash pine										
Softwood	16.3	0.4	15.4	0.3	7.9	0.3	2.1	0.1	7.5	0.2
Hardwood	4.9	3.0	0.5	0.9	0.3	0.7	0.1	0.2	0.3	0.6
Loblolly pine										
Softwood	16.1	0.3	15.4	0.4	2.9	0.3	1.2	0.4	6.2	0.4
Hardwood	4.7	5.8	3.6	3.9	0.8	2.5	0.4	2.5	1.6	3.1
Pond pine										
Softwood	8.4	1.5	10.6	0.3	3.9	0.5	1.7	0.2	3.9	0.3
Hardwood	--	1.8	0.5	1.3	0.3	--	--	3/	0.1	0.3
Sand pine										
Softwood	--	--	9.8	0.9	7.0	1.0	0.4	0.1	2.7	0.3
Hardwood	--	--	--	--	--	--	--	--	--	--
Cypress										
Softwood	8.5	1.3	19.2	1.0	10.0	0.8	2.1	0.6	12.0	0.9
Hardwood	5.7	1.9	2.6	2.0	1.3	0.6	0.1	0.6	1.6	1.3
Lowland hardwoods										
Softwood	2.4	3/	1.7	0.2	1.6	0.2	0.8	0.1	1.5	0.2
Hardwood	11.4	10.2	13.0	10.3	8.0	7.4	2.6	5.8	8.1	8.0
Upland hardwoods										
Softwood	--	--	--	--	0.4	--	0.5	0.1	0.5	3/
Hardwood	10.4	--	4.9	15.5	2.5	5.6	0.5	3.9	1.0	4.3
Scrub oak										
Softwood	--	--	--	--	--	--	0.2	3/	0.2	3/
Hardwood	--	--	--	--	--	--	3/	2.2	3/	2.2
All types										
Softwood	7.4	0.2	12.7	0.4	5.8	0.3	1.3	0.1	4.8	0.2
Hardwood	8.4	7.3	3.6	3.1	1.9	2.1	0.3	1.4	1.5	2.0

1/ Sound wood and bark, excluding volume of palms.

2/ Sound trees; cull trees.

3/ Less than 0.05 cords per acre.

Table 16.--Average volume[1/] per acre of pole timber trees by forest type, species group, and stand size, 1949

(in standard cords)

Forest type and species group	Large saw-timber stands		Small saw-timber stands		Pole timber stands		Other stand sizes		All stands	
	Sound[2/]	Cull[2/]	Sound	Cull	Sound	Cull	Sound	Cull	Sound	Cull
Longleaf pine										
Softwood	1.9	--	4.4	3/	3.8	3/	0.8	3/	2.0	3/
Hardwood	--	0.6	3/	0.1	3/	0.3	3/	0.3	3/	0.3
Slash pine										
Softwood	1.8	--	4.1	0.1	5.4	0.2	0.8	3/	2.7	0.1
Hardwood	2.7	1.3	0.4	0.4	0.2	0.4	0.1	0.2	0.2	0.3
Loblolly pine										
Softwood	0.7	--	1.1	0.1	2.2	0.3	0.8	0.1	1.1	0.1
Hardwood	2.0	2.6	2.3	1.5	0.6	1.4	0.1	0.5	0.9	1.1
Pond pine										
Softwood	--	--	2.5	0.1	2.0	0.5	0.4	--	1.1	0.1
Hardwood	--	1.5	0.3	0.6	0.3	--	--	3/	0.1	0.1
Sand pine										
Softwood	--	--	1.9	0.4	6.4	0.8	0.3	--	1.9	0.2
Hardwood	--	--	--	--	--	--	--	--	--	--
Cypress										
Softwood	0.6	0.2	7.1	0.4	0.7	0.5	0.8	0.3	5.0	0.4
Hardwood	3.3	1.1	1.8	1.1	1.3	0.6	0.1	0.4	1.2	0.8
Lowland hardwoods										
Softwood	0.1	--	0.2	0.1	0.5	3/	0.3	3/	0.3	3/
Hardwood	2.8	1.8	5.9	3.0	6.4	3.0	3/	2.0	4.3	2.6
Upland hardwoods										
Softwood	--	--	--	--	3/	--	0.1	--	0.1	--
Hardwood	1.3	--	3.0	2.3	1.7	3.7	0.3	1.8	0.6	2.2
Scrub oak										
Softwood	--	--	--	--	--	--	0.1	--	0.1	--
Hardwood	--	--	--	--	--	--	3/	1.6	3/	1.6
All types										
Softwood	0.6	3/	3.7	0.1	3.6	0.1	0.6	3/	1.9	0.1
Hardwood	2.6	1.7	1.8	1.1	1.5	1.0	0.2	0.7	0.8	0.9

1/ Sound wood and bark, excluding volume of palms.

2/ Sound trees; cull trees.

3/ Less than 0.05 cords per acre.

Table 17.--Number[1/] of turpentine pine trees by working status and tree size, 1949

(in thousands of trees)

Working status	Pole size trees	Small saw-timber trees	Large saw-timber trees	All trees
Round timber[2/]	135,602	48,254	1,570	185,426
Working timber[3/]	411	9,625	294	10,330
Resting timber	685	6,314	298	7,297
Abandoned timber	332	3,407	268	4,007
Worked-out timber	436	4,344	426	5,206
All classes	137,466	71,944	2,856	212,266

1/ Includes sound and rough cull trees.

2/ In 1934 there were 25,100,000 round trees 9.0 inches d.b.h. and larger compared to 49,824,000 in 1947.

3/ In 1934 there were 21,404,000 working trees 9.0 inches d.b.h. and larger compared to 9,919,000 in 1947.

Table 18.--Area of turpentine timber crops by working status, 1949

Crop working status	Area	
	Acres	Percent
Round timber	882,100	50.3
Working timber		
Front-faced	291,000	16.6
Back-faced	193,900	11.0
Resting timber	241,100	13.7
Abandoned timber	64,800	3.7
Worked-out timber	81,900	4.7
All classes	1,754,800	100.0

Table 19.--Area of stump land and tonnage of wood naval stores stumps by availability class, 1949

Availability class	Area	Tonnage[1/]
	Acres	Thousand tons
Merchantable area	3,226,000	[4/] 10,418
Marginal area[2/]	252,700	763
Potential area[3/]	148,900	483
Inaccessible area	156,800	468
All classes	3,784,400	12,132

1/ Includes stumps on agricultural land.

2/ Stump-land areas less than 25 acres in extent and partially worked areas.

3/ Unworkable at present due to density of timber stands.

4/ A check on the tons of stumps harvested from 90,000 acres indicates the recoverable tonnage under existing practices is approximately two-thirds of the merchantable volume shown.

Table 20.--Number of trees[1/] by species group, quality class, and tree size, 1949

(in thousands of trees)

Species group and quality class	Sapling-size trees	Pole-size trees	Small saw-timber trees	Large saw-timber trees	All trees
Yellow pines					
Sound trees	567,912	153,541	79,506	4,013	804,972
Rough culls	52,199	3,198	1,201	200	56,798
Rotten culls	30,088	1,132	346	102	31,668
Total	650,199	157,871	81,053	4,315	893,438
Other softwoods:					
Sound trees	134,242	52,146	22,109	718	209,215
Rough culls	15,372	3,377	1,076	27	19,852
Rotten culls	9,234	3,285	1,976	505	15,000
Total	158,848	58,808	25,161	1,250	244,067
Soft-textured hdwds.					
Sound trees	283,772	54,064	11,362	1,783	350,981
Rough culls	87,402	15,821	3,253	370	106,846
Rotten culls	37,565	15,418	5,519	1,504	60,006
Total	408,739	85,303	20,134	3,657	517,833
Hard-textured hdwds.					
Sound trees[2/]	152,914	27,996	5,578	1,198	187,686
Rough culls[2/]	308,291	71,296	8,712	1,521	389,820
Rotten culls	25,058	12,809	4,418	2,616	44,901
Total	486,263	112,101	18,708	5,335	622,407
Palms	[3/]	2,366	18,910	89	21,365
All species	1,704,049	416,449	163,966	14,646	2,299,110

1/ All trees 1.0 inches d.b.h. and larger.

2/ Includes scrub oak and noncommercial trees.

3/ Not recorded.

Table 21.--Area of poorly stocked stands and unstocked areas by plantability classes, 1949

Forest type[1/]	No planting required[2/]	Suitable for machine planting	Hand planting required	All classes
	Acres	Acres	Acres	Acres
Longleaf pine	751,100	587,300	31,700	1,370,100
Slash pine	384,900	247,200	76,500	708,600
Loblolly pine	52,100	26,800	3,200	82,100
Pond pine	67,500	22,300	6,900	96,700
Sand pine	23,400	3,000	--	26,400
Upland hdwds.	110,500	37,500	33,900	181,900
Scrub oak	51,100	630,700	45,600	727,400
All types	1,440,600	1,554,800	197,800	3,193,200
Percent	45.1	48.7	6.2	100.0

1/ Lowland types not classified.

2/ Sufficient seed trees present or area is restocking naturally.

Table 22.--Commercial forest area by forest type and degree of stocking, 1949

Forest type	Degree of stocking[1]					Total area
	0-9 percent	10-39 percent	40-69 percent	70-99 percent	100 + percent	
	STOCKING IN SOUND TREES					
	Acres	Acres	Acres	Acres	Acres	Acres
Longleaf pine	1,007,200	877,100	259,200	76,300	32,100	2,251,900
Slash pine	453,100	653,300	314,800	217,900	293,100	1,932,200
Loblolly pine	86,300	48,100	70,700	17,100	41,600	263,800
Pond pine	65,200	109,200	36,700	5,500	--	216,600
Sand pine	31,100	69,800	24,900	23,500	80,200	229,500
Cypress	90,700	77,500	87,200	125,700	227,700	608,800
Lowland hdwds.	97,100	233,000	346,400	177,100	237,600	1,091,200
Upland hdwds.	141,800	68,600	42,600	16,600	--	269,600
Scrub oak	667,000	60,400	--	--	--	727,400
Palm	10,700	--	--	--	--	10,700
All types	2,650,200	2,197,000	1,182,500	659,700	912,300	7,601,700
Percent	34.9	28.9	15.5	8.7	12.0	100.0
	STOCKING IN TREES OF ALL QUALITY CLASSES[2]					
Longleaf pine	843,200	869,500	352,200	141,500	45,500	2,251,900
Slash pine	406,300	595,700	343,000	206,200	381,000	1,932,200
Loblolly pine	47,700	58,000	39,500	36,900	81,700	263,800
Pond pine	65,200	101,200	41,000	3,700	5,500	216,600
Sand pine	14,900	31,400	25,700	35,900	121,600	229,500
Cypress	70,200	73,000	59,700	104,600	301,300	608,800
Lowland hdwds.	19,900	74,300	130,400	235,800	630,800	1,091,200
Upland hdwds.	31,200	60,900	58,100	79,700	39,700	269,600
Scrub oak	99,900	369,000	215,100	35,400	8,000	727,400
Palm	--	--	4,700	6,000	--	10,700
All types	1,598,500	2,233,000	1,269,400	885,700	1,615,100	7,601,700
Percent	21.0	29.4	16.7	11.7	21.2	100.0

1/ Including trees 1.0 inches d.b.h. and larger.

2/ Includes sound trees, cull trees, and palms.

Table 23.--County area by broad use class, 1949

County	Total area1/	Non-forest area		Forest land		
		Land	Water	Non-commercial2/	Commercial	
	Acres	Acres	Acres	Acres	Acres	Percent
Alachua	615,000	207,000	37,700	300	370,000	64.1
Baker	376,300	18,900	1,100	--	356,300	95.0
Bradford	195,200	43,400	7,500	--	144,300	76.9
Clay	412,100	32,700	29,100	1,000	349,300	91.2
Columbia	505,000	107,600	4,100	1,200	392,100	78.3
Dixie	453,800	49,800	9,100	--	394,900	88.8
Duval	537,600	133,800	56,200	1,400	346,200	71.9
Flagler	322,600	20,700	17,000	1,700	283,200	92.7
Gilchrist	222,700	69,000	4,100	--	149,600	68.4
Hamilton	329,600	59,100	3,500	1,300	265,700	81.5
Lafayette	352,600	58,100	4,300	--	290,200	83.3
Levy	727,700	155,400	37,100	800	534,400	77.4
Madison	453,100	143,600	6,000	3/	303,500	67.9
Marion	1,057,300	223,400	41,700	--	792,200	78.0
Nassau	429,400	49,400	15,200	1,500	363,300	87.7
Putnam	562,600	50,000	65,300	--	447,300	89.9
St. Johns	422,400	53,400	43,800	1,400	323,800	85.5
Suwannee	439,700	180,000	7,200	700	251,800	58.2
Taylor	673,300	48,200	15,700	18,300	591,100	89.9
Union	156,800	27,000	2,100	--	127,700	82.5
Volusia	772,500	101,400	83,900	62,400	524,800	76.2
Unit total	10,017,300	1,831,900	491,700	92,000	7,601,700	79.8

1/ Gross area from Bureau of the Census, 1940.

2/ Non-productive forest land plus forest land withdrawn from commercial use.

3/ Less than 50 acres.

Table 24.--Ownership of commercial forest land by county, 1949

County	Private		Public					
			National forest	Other federal	State	County, city, town	Total public	
	Acres	Percent	Acres	Acres	Acres	Acres	Acres	Percent
Alachua	362,600	98.0	--	500	5,700	1,200	7,400	2.0
Baker	278,100	78.1	77,500	500	200	--	78,200	21.9
Bradford	133,000	92.2	--	300	11,000	--	11,300	7.8
Clay	282,500	80.9	--	42,700	24,100	1/	66,800	19.1
Columbia	313,900	80.1	76,200	400	1,300	300	78,200	19.9
Dixie	393,700	99.7	--	400	700	100	1,200	0.3
Duval	330,900	95.6	--	12,200	1,400	1,700	15,300	4.4
Flagler	282,100	99.6	--	300	500	300	1,100	0.4
Gilchrist	148,800	99.5	--	500	300	--	800	0.5
Hamilton	265,300	99.8	--	400	1/	1/	400	0.2
Lafayette	289,600	99.8	--	300	300	--	600	0.2
Levy	532,900	99.7	--	900	500	100	1,500	0.3
Madison	303,200	99.9	--	100	200	--	300	0.1
Marion	541,700	68.4	241,700	3,800	4,700	300	250,500	31.6
Nassau	358,600	98.7	--	1/	3,400	1,300	4,700	1.3
Putnam	414,800	92.7	21,900	3,400	6,600	600	32,500	7.3
St. Johns	321,800	99.4	--	700	1,000	300	2,000	0.6
Suwannee	251,600	99.9	--	200	--	--	200	0.1
Taylor	589,900	99.8	--	200	900	100	1,200	0.2
Union	121,800	95.4	--	800	5,100	--	5,900	4.6
Volusia	520,000	99.1	--	800	2,600	1,400	4,800	0.9
Unit total	7,036,800	92.6	417,300	69,400	70,500	7,700	564,900	7.4

1/ Less than 50 acres.

Table 25.--Net volume[1/] of saw timber by county and species group, 1949

(in thousand board feet)

County	Softwoods[2/]	Tupelo, sweet-gum, and soft maple[3/]	Other hardwoods	All species
Alachua	499,000	83,700	81,000	663,700
Baker	706,400	50,100	1,000	757,500
Bradford	250,500	9,400	2,100	262,000
Clay	255,800	54,700	13,500	324,000
Columbia	599,800	46,000	25,700	671,500
Dixie	290,300	90,700	77,600	458,600
Duval	257,600	89,200	27,300	374,100
Flagler	471,000	44,400	7,100	522,500
Gilchrist	135,100	600	5,900	141,600
Hamilton	356,100	37,300	10,400	403,800
Lafayette	489,700	16,600	13,300	519,600
Levy	617,700	86,400	96,000	800,100
Madison	372,600	74,900	13,900	461,400
Marion	563,800	65,100	61,700	690,600
Nassau	348,700	96,000	35,000	479,700
Putnam	382,100	91,700	8,600	482,400
St. Johns	314,700	66,000	16,500	397,200
Suwannee	175,800	31,600	5,800	213,200
Taylor	529,700	54,500	38,900	623,100
Union	252,900	59,300	5,600	317,800
Volusia	425,000	58,100	16,300	499,400
Unit total	8,294,300	1,206,300	563,200	10,063,800

1/ Log scale, International 1/4-inch rule.

2/ Includes pine, cypress, and cedar.

3/ Includes other soft-textured hardwoods.

Table 26.--Net volume[1/] of saw timber by county, broad species group, and diameter class group, 1949

County	Softwoods		Hardwoods		Soft-woods	Hard-woods
	9-14 inches	15 + inches	11-16 inches	17 + inches		
	Thousand bd. ft.	Thousand bd. ft.	Thousand bd. ft.	Thousand bd. ft.	Percent	Percent
Alachua	459,200	39,800	114,700	50,000	75.2	24.8
Baker	609,900	96,500	30,400	20,700	93.3	6.7
Bradford	225,000	25,500	9,300	2,200	95.6	4.4
Clay	225,400	30,400	32,300	35,900	79.0	21.0
Columbia	533,700	66,100	49,300	22,400	89.3	10.7
Dixie	283,500	6,800	106,400	61,900	63.3	36.7
Duval	218,900	38,700	79,200	37,300	68.9	31.1
Flagler	421,500	49,500	36,000	15,500	90.1	9.9
Gilchrist	121,700	13,400	4,000	2,500	95.4	4.6
Hamilton	326,800	29,300	42,000	5,700	88.2	11.8
Lafayette	460,900	28,800	18,300	11,600	94.2	5.8
Levy	531,800	85,900	129,100	53,300	77.2	22.8
Madison	332,200	40,400	76,700	12,100	80.8	19.2
Marion	455,100	108,700	84,400	42,400	81.6	18.4
Nassau	322,200	26,500	102,800	28,200	72.7	27.3
Putnam	281,800	100,300	79,700	20,600	79.2	20.8
St. Johns	253,400	61,300	49,600	32,900	79.2	20.8
Suwannee	132,900	42,900	28,300	9,100	82.5	17.5
Taylor	489,000	40,700	61,900	31,500	85.0	15.0
Union	220,100	32,800	40,200	24,700	79.6	20.4
Volusia	355,200	69,800	54,700	19,700	85.1	14.9
Unit total	7,260,200	1,034,100	1,229,300	540,200	82.4	17.6

1/ Log scale, International 1/4-inch rule.

Table 27.--Net volume 1/ of all trees by county, pulping-species groups, and tree diameter groups, 1949

SOUND TREES (in thousand cords)

County	Yellow pines		Tupelo, sweetgum and soft maple 2/		Other species		All species
	5-12 inches	13 + inches	5-12 inches	13 + inches	5-12 inches	13 + inches	
Alachua	1,582	361	207	173	273	205	2,801
Baker	2,020	424	183	111	427	102	3,267
Bradford	889	96	42	16	198	55	1,296
Clay	948	249	106	122	137	14	1,576
Columbia	2,090	345	514	81	448	109	3,587
Dixie	772	101	454	165	730	254	2,476
Duval	794	161	221	176	271	74	1,697
Flagler	987	194	231	80	872	164	2,528
Gilchrist	223	71	9	--	225	42	570
Hamilton	1,228	115	281	52	304	23	2,003
Lafayette	974	417	103	34	339	56	1,923
Levy	1,482	293	402	158	1,332	319	3,986
Madison	782	237	425	115	535	58	2,152
Marion	1,770	607	215	129	171	141	3,033
Nassau	1,399	276	357	191	255	77	2,555
Putnam	1,103	344	326	191	288	56	2,308
St. Johns	873	275	197	155	187	78	1,765
Suwannee	536	183	100	56	65	19	959
Taylor	1,805	303	357	112	648	122	3,347
Union	632	136	205	121	182	47	1,323
Volusia	679	200	292	96	1,026	198	2,491
Unit total	23,568	5,388	5,227	2,334	8,913	2,213	47,643

ROTTEN AND ROUGH CULLS (in thousand cords)

Alachua	34	--	123	180	308	364	1,009
Baker	46	22	143	65	57	8	341
Bradford	7	4	60	19	84	21	195
Clay	1	11	91	158	313	204	778
Columbia	9	2	153	95	187	139	585
Dixie	3	--	210	186	486	566	1,451
Duval	1	9	146	191	152	229	728
Flagler	22	24	76	45	108	134	409
Gilchrist	3	--	19	--	342	84	448
Hamilton	25	16	108	94	207	131	581
Lafayette	6	--	42	6	156	36	246
Levy	4	8	128	180	462	618	1,400
Madison	23	20	173	106	405	201	928
Marion	100	9	130	196	530	555	1,520
Nassau	8	4	210	152	207	321	902
Putnam	3	18	193	286	591	206	1,297
St. Johns	23	16	151	157	210	133	690
Suwannee	5	--	35	67	408	156	671
Taylor	52	30	175	145	419	281	1,102
Union	8	4	66	84	46	32	240
Volusia	70	29	229	107	447	291	1,173
Unit total	453	226	2,661	2,519	6,125	4,710	16,694

1/ Sound wood and bark, excluding volume of palms (limbs of sawlog-size hardwoods are included in cull volumes).

2/ Includes bay, magnolia, and yellow-poplar.

DEFINITION OF TERMS

Land-Use Classes

Forest. Land bearing forest growth, land from which the forest has been removed and which shows no evidence of any other recent land use, or former agricultural land which now has a five-percent stocking of trees. Subdivided into the following classes:

> Commercial: Land bearing, or capable of bearing, timber of commercial character and available now or prospectively for commercial use.
>
> Reserved: Forest land in public ownership upon which commercial timber cutting is prohibited.
>
> Non-productive: Forest land of such low productivity or so inaccessible that commercial timber will not be produced.

Non-forest. Land less than five percent stocked with trees and showing evidence of non-forest use.

> Agriculture: Under cultivation or in pasture, including farm yards on active farms.
>
> Idle: Land previously cultivated or pastured but now idle or abandoned. If reverting to forest there must be less than five percent stocking of trees.
>
> Marsh: Low, boggy, non-forested land usually supporting a heavy growth of grass.
>
> Dunes and beaches: Non-forested sand dunes or coastal beaches.
>
> Urban and other: Includes towns, suburban areas being developed for residential or other urban purposes, school yards, cemeteries, industrial sites, roads, railroads, power lines, and other rights-of-way. Scattered areas of timber within exterior boundaries of cities or villages are also included.
>
> Water: Includes both the small ponds and lakes less than 40 acres in size and streams, sloughs, and canals less than ten chains in width classed as "land area" by the Bureau of the Census. Also includes the "inland water" listed by the Census. On coastal areas the water-line is the mean high-tide mark; tidal flats are classed as water.

Forest Types

Longleaf pine. Stands in which coniferous species comprise at least 25 percent of the dominant and codominant trees, with longleaf pine predominating.

Slash pine. Stands in which coniferous species comprise at least 25 percent of the dominant and codominant trees, with slash pine predominating.

Loblolly pine. Stands in which coniferous species comprise at least 25 percent of the dominant trees, with loblolly pine predominating. Spruce pine is included in this type.

Pond pine. Stands in which coniferous species comprise at least 25 percent of the dominant and codominant trees with pond pine predominating.

Sand pine. Stands in which coniferous species comprise at least 25 percent of the dominant and codominant trees with sand pine predominating.

Cypress. Stands in which coniferous species comprise at least 25 percent of the dominant and codominant trees, with cypress predominating. White cedar is also included with this type.

Lowland hardwoods. Stands in which mixed hardwoods such as tupelo gum, black-gum, sweetgum, white oak, water oak, red maple, and ash comprise at least 75 percent of the dominant and codominant trees. Found along rivers, small streams, and in swamps and bays.

Upland hardwoods. Stands in which mixed hardwoods such as red oak, white oak, post oak, hickory, ash, sweetgum, elm, and yellow-poplar comprise at least 75 percent of the dominant and codominant trees. Found on the drier upland sites and on low rolling hills bordering the flatwood zone.

Scrub oak. Stands in which scrub species such as blackjack, bluejack, turkey and laurel oaks predominate and in which sound commercial species comprise less than five percent of satisfactory stocking.

Palms. Stands in which there is at least a five-percent stocking of merchantable palm trees and less than five-percent stocking of other sound commercial species.

Stand-Size Classes

Saw timber. Stands containing at least 1,500 board feet net, International 1/4-inch log rule, per acre in sound, live, softwood trees 9.0 inches d.b.h. or larger or hardwood trees 11.0 inches d.b.h. or larger. Two classes of saw-timber stands are recognized:

Large saw timber: Stands of saw timber having more than 50 percent of the net board-foot volume in softwood trees 15.0 inches d.b.h. or larger, or hardwood trees 17.0 inches d.b.h. or larger.

Small saw timber: Stands of saw timber having 50 percent or less of the net board-foot volume in softwood trees 15.0 inches d.b.h. or larger, or hardwood trees 17.0 inches d.b.h. or larger.

Pole timber. Stands at least 10 percent stocked with pole-size or larger timber, with at least one-half the minimum stocking in pole sizes, and which have less than 1,500 board feet net per acre of saw timber.

Seedling and sapling. Stands less than 10 percent stocked by pole-size or larger trees and with less than 1,500 board feet net per acre, but at least 40 percent stocked with commercial species. Eight hundred seedlings or saplings per acre are considered full stocking.

Poorly stocked and unstocked. Stands of pole-size or larger trees that are less than 10 percent stocked, seedling or sapling stands less than 40 percent stocked, or nonstocked forest land.

Diameters

D.b.h. (diameter at breast height). Stem diameter in inches, outside bark, measured at 4½ feet above the ground.

Diameter class. All trees were tallied by 2-inch diameter classes, each class including diameters 1.0 inch below and 0.9 inch above the stated midpoint; e.g., trees 7.0 to and including 8.9 inches are in the 8-inch class.

Tree Classification

Sound saw-timber trees. Softwood trees at least 9.0 inches d.b.h. and hardwood trees at least 11.0 inches d.b.h., with not less than one merchantable log 12 feet long, or with less than 50 percent of the gross volume of the tree in sound saw timber.

Sound pole timber trees. Straight-boled trees between 5.0 inches d.b.h. and saw-timber size.

Sound sapling-size trees. Trees 1.0 inches to 4.9 inches d.b.h. which will grow into pole or saw-timber size trees of sound quality.

Rough cull trees. Trees that fail to qualify as sound timber because of poor form, excessive limbiness, or other sound defect. Volumes shown for rough cull trees also include the limbs, in sections four feet long and at least 4.0 inches in diameter inside bark, of sound saw-timber-size hardwoods. Scrub oak and noncommercial species are included in this group.

Rotten cull trees. Trees that fail to qualify as sound timber because of rotten defect.

Palms. All species of Sabal 5.0 inches d.b.h. and larger with at least 12 feet of clear stem. All palm trees were considered to be free of rotten defect.

Species Groups

Softwoods. All of the pines, eastern redcedar, Atlantic white-cedar, pond cypress, and baldcypress.

Soft hardwoods. Black and water tupelos, sweetgum, and soft maple. The other soft-textured hardwoods include sweetbay, cottonwood, willow, basswood, southern magnolia, and yellow-poplar.

Hard hardwoods. All of the oaks, hickories, and ash. The other hard-textured hardwoods include river birch, elm, hackberry, and sycamore.

Volume Estimates

Board-foot volume. The volume in board feet, measured by the International 1/4-inch rule, exclusive of defect, of that portion of saw-timber trees between the stump and the upper limit of merchantability for sawlogs.

Volume in cords. For sound trees the volume in standard cords (including bark) of the sound portion of trees 5.0 inches d.b.h. and larger, between stump and a minimum top-stem diameter of 4.0 inches inside bark. For cull trees similar volumes are included plus the volume in limbs, in sections four feet long and at least 4.0 inches in diameter inside bark, of saw-timber size hardwoods.

Volume in cubic feet. Same as volume shown in cords except bark is not included.

International 1/4-inch log rule. A rule for estimating the board-foot volume of 4-foot log sections, according to the formula $V = .905\ (0.22D^2 - 0.71D)$. The taper allowance for computing the volume in log lengths greater than four feet is 0.5 inch per 4-foot section. Allowance for saw kerf is 1/4 inch.

Standard cord. A stacked pile, 4 x 4 x 8 feet, of round or split bolts, estimated to contain, on the average, 90 cubic feet of softwoods (wood and bark) or 80 cubic feet of hardwoods (wood and bark).

Gum Naval Stores Conditions

Round timber. A minimum of 15 longleaf and slash pine trees 9.0 inches d.b.h. or larger per acre that have never been worked for naval stores.

Working. Longleaf and slash pine trees that are now being worked for naval stores.

> Front-faced. Turpentine tree species on which the front or first face is now being worked.
>
> Back-faced. Turpentine tree species on which the front face has been worked out and on which a back (second or third, etc.) face is being worked.

Resting. Longleaf and slash pine trees with a worked-out front face at least 5 feet high and on which back-facing has not been started.

Abandoned. Longleaf and slash pine trees on which faces less than 5 feet high were discontinued.

Worked-out. Longleaf and slash pine trees on which two or more faces at least 5 feet high have been worked out and with no possibility of supporting another face.

Stocking

Stocking classifications were based on the number of stems present by d.b.h. classes. Areas having the minimum numbers of trees listed below, either in a single diameter class or in combinations, were considered adequately stocked.

DBH	Minimum number trees per acre
2 inches	800
4 inches	600
6 inches	450
8 inches	300
10 inches	200
12 inches	150
14 inches	110

RELIABILITY OF THE DATA

In general there are two possible sources of error in estimating timber volumes and land areas in various categories under procedures used by the Forest Survey. These are (1) common mistakes resulting from errors of judgment in classifying or recording data, mistakes made in compiling the information or bias in the application of techniques, and (2) sampling errors.

In Forest Survey work a diligent effort is made to maintain a high degree of accuracy in the collection and compilation of the data. Common errors are eliminated or minimized through training and frequent check cruises in the field and through complete editing and machine verification of office procedures in compiling the data.

Sampling errors (standard errors of estimate) carry no connotation of faulty work, but are theoretical measures of the reliability of the estimates based on the variability exhibited by the sample data. Sampling errors were the only measurable errors involved in computing the reliability of the data.

Forest area. The sampling intensity was sufficient to provide an estimate of the forest acreage of the Unit with a standard error of ± 0.6 percent. This indicates the probabilities are two out of three that the actual forest area is within ± 0.6 percent of the given estimate.

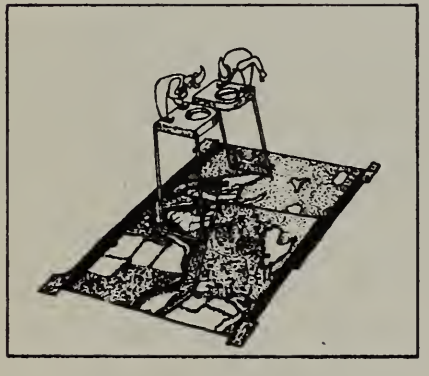
Timber volumes. The standard error of estimate of the board-foot volume of saw timber in the Unit is ± 2.4 percent. Here again, the probabilities are two out of three that the actual volume is ± 2.4 percent of the given estimate. Corresponding errors for the total volume in cords or cubic feet were not computed, but they should be smaller.

Use of county data. The tables showing area and timber volumes by county are included to facilitate the grouping of county data in any combination desired. Statistics for individual counties have a standard error of estimate for forest area ranging from ± 2.7 to ± 7.0 percent, and for board-foot volume from ±7.0 to ± 18.0 percent. Obviously detailed comparison between counties are subject to considerable error and should be avoided. Grouping a number of counties together will increase the reliability of the area and volume estimates and make these data sufficiently accurate for most purposes.

HOW THE FOREST INVENTORY IS MADE

The present system of inventory is based upon interpretation of aerial photographs supplemented by cruising of randomly selected ground plots. The county is the basic work unit. Steps in the procedure are as follows:

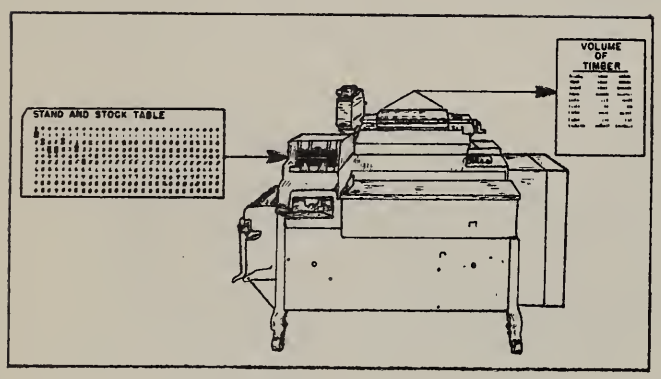
1. Acreages of forest land are estimated with the use of a dot grid placed on every 3rd contact print along flight lines in each county. The proportion of dots falling on forest areas when applied to the gross area of the county yields a preliminary estimate of the acreage of forest land. This is later revised after certain field checks.



2. Every 3rd plot listed as forest in step one is classified into forest type, stand class, and density class by careful stereoscopic analysis of the photographs. The proportion of plots falling in each classification when applied to the forest area of the county gives the area in each classification. These areas are revised following ground checking.

3. Timber cruisers make a detailed on-the-ground tally of every 3rd large sawtimber photo plot, every 4th small sawtimber, every 6th pole timber, every 13th seedling and sapling plot, and every 26th poorly stocked plot, to obtain volume, growth, cull, and mortality data, and to check accuracy of photo classification. They also check a sample of the idle and agricultural plots to determine the area reverting to forest.

4. Growth estimates are based on increment borings taken from trees of the various diameters and species in each forest type and stand class.



5. All field data are sent to the Asheville office for editing and are placed on punch cards for machine tabulation. Statistical techniques are used to correct for changes in photo classification, and to determine final figures on areas, volumes, and growth.

FOREST SURVEY REPORTS PUBLISHED SINCE 1945

Southeastern Forest Experiment Station

No. 21 - 1945 Pulpwood Production by County in the Carolinas and Virginia. 1946

No. 22 - Southern Forests as a Source of Pulpwood. 1947

No. 23 - 1946 Pulpwood Production by County in the Southeast. 1947

No. 24 - Southern Pulpwood Production and the Timber Supply. 1948

No. 25 - Forest Resources of the Lower Coastal Plain of South Carolina. 1948

No. 26 - 1946 Commodity Drain by County from South Carolina Forests. 1948

No. 27 - 1947 Pulpwood Production by County in the Southeast. 1948

No. 28 - South Carolina's Forest Resources, 1947. 1949

No. 29 - 1948 Pulpwood Production by County in the Southeast. 1949